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ABSTRACT

Each of the four issues in this volume contains a specific concern of population studies. Issue number 1, "Responding to the Challenge" (K. Crews), accompanies the learning series module, "Global Population Trends: Challenges Facing World Leaders." Sections of the issue focus on elderly populations, especially in Japan, the effect of population pressures and large foreign debts on countries such as Peru, and the nature of economic immigration in the United States and political immigration in West Germany. A quiz for students using "The Population Data Sheet" is given, as well as an annotated bibliography of six resources on population issues. Issue number 2, "Mexico's Population: A Profile" (N. Paul), discusses the economy, migration, urbanization, and the future of the Mexican population. An annotated bibliography of seven items is included. Issue number 3, "Teaching Environmental Connections" (K. Crews), accompanies the teaching module, "Human Needs and Nature's Balance: Population, Resources, and the Environment," and contains review and reference questions on that material and an annotated list of 19 resources. Issue number 4, "Where Is the Metropolitan U.S.?" (K. Crews), designed to accompany the "Metropolitan U.S. Data Sheet," contains discussion questions on that reading, looks at metropolitan growth, and contains an annotated list of seven items. (PPB)

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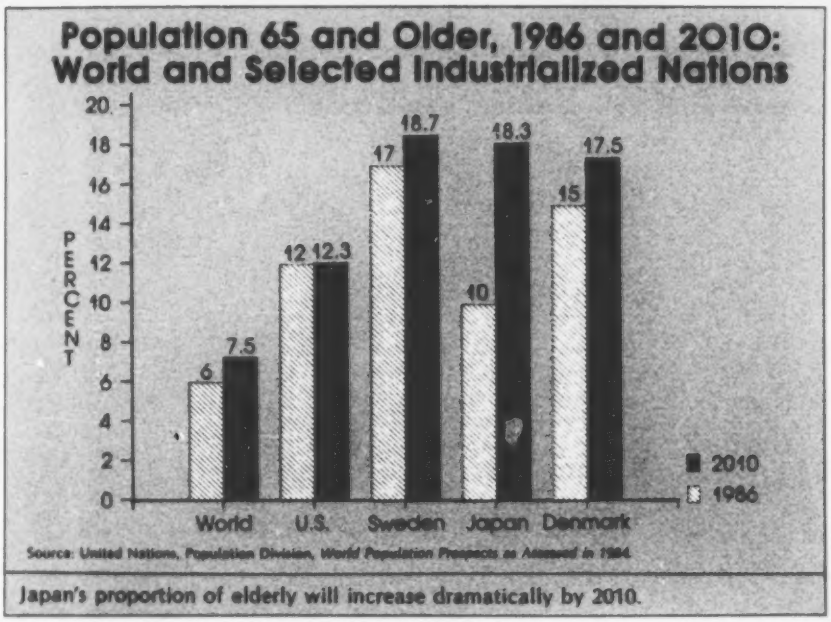
Responding to the Challenge

This issue of *Population Education Interchange* accompanies the Population Learning Series module, "Global Population Trends: Challenges Facing World Leaders." The student reading discusses the scope of population issues, world population dynamics, the factors that affect population growth in less developed countries, and population issues which world leaders must deal with now and in the future.

In the coming decades, country leaders will face challenges caused by many different kinds of population pressures. Leaders in countries with slow or no population growth must not only deal with the consequences of low growth, such as labor shortages, and an increasing proportion of elderly, but also with the possibility of spillover from countries with rapidly growing populations. On the other hand, leaders of high growth countries must deal with providing their populations with the basics, such as health care, adequate food, and education; they must find ways to employ their growing work forces; and they must find ways to pay off growing debts to foreign creditors without sacrificing social debts to their own populations.

Many world leaders are already acknowledging these concerns and are proposing ways to deal with them. For example, many countries with increasing elderly populations are making social reforms to adapt to this change. Leaders of some high population growth countries are coming up with new plans to pay off foreign debt, employ their populations, and provide adequate health and social services. The United States and some European countries are changing immigration laws in an attempt to ward off massive influxes of illegal immigrants.



Japan's proportion of elderly will increase dramatically by 2010.

THE GROWING ELDERLY POPULATION IN INDUSTRIALIZED NATIONS

Focus on Japan

Many industrialized countries have a growing proportion of elderly in their populations. For example, 17 percent of Sweden's population is over age 65; in Denmark, the United States, and Japan, these figures are 15, 12, and 10 percent respectively. Japan's percentage in this age group is now relatively modest, but will nearly double, from 10 to 18.7 percent, by 2010, while the proportions in the other three countries increase by two percentage points or less (see graph above).

Japan's leaders are concerned with how to care for such a rapidly increasing elderly population. Like the U.S., Japan feared that its social security system would go bankrupt and in 1986 took steps to delay the age at which full pensions are received. Businesses had recently agreed to raise the retirement age from 55 to 60; now the government wants to raise it to 65.

In 1985, Japan passed legislation designed to: 1) unify several public pension systems by 1995, 2) reduce the tax burden of the working population, 3) ensure a balance between pension incomes of the elderly and living standards of workers, and 4) protect women by giving them their own benefits. Sweden and Denmark, with substantial elderly populations, have similarly altered their pension systems. Countries like the U.S., where elderly numbers will grow substantially only when the baby boom generation begins to retire after 2010, are studying the issues but making no dramatic reforms at this time.

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THE DEBT CRUNCH
Focus on Peru

Peru, with 20.2 million people, is the fifth most populous country in Latin America and one of only eight with more than 10 million. Of these eight countries, Peru has the lowest per capita income ($1,040 in 1986), one of the highest births per woman (4.3), the lowest life expectancy at birth (59 years), the highest infant mortality rate (99 infant deaths per 1,000 live births), and one of the highest percentages of population under age 15 (41). In terms of quality of life, then, Peru is one the least developed of Latin America's large countries.

In addition to its precarious development status, Peru, like other Latin American countries, is in a recession. Its poor economic status was caused by dependence on foreign borrowing in the 1970s, poor management of funds and projects, adverse climatic factors affecting agriculture, and the downturn of the world economy. By 1985, 50 percent of Peru's economically active population was unemployed or underemployed. In 1984, Peru's foreign debt was 59 percent of its Gross National Product and it paid 15.3 percent of export earnings in debt service.

In 1985, Peru elected a new president, Alan Garcia. He believes that the country cannot make full debt payments and at the same time improve the country's economy. He has thus proposed that his government bypass the International Monetary Fund and deal directly with foreign creditors. He has stated that no more than 10 percent of the country's annual foreign exchange earnings will be paid to service the outstanding debt. In his opinion, compliance with the previous payment schedule would keep his country in a recession which would make future debt payment and development efforts difficult, increase social tensions, and weaken democracy.

Population pressures and large foreign debts put countries like Peru in a double bind. On the one hand, improvements in living standards and access to basic services for poor people require increased public expenditures. But the international banks see these expenditures as a threat to debt service capacity and have threatened to withhold further lending unless they are curbed. Garcia has challenged the international financial community with his stand in limiting payment of interest.

IMMIGRATION
United States

Each year an undetermined number of illegal immigrants enter the United States in search of a better life. An estimated 50 to 60 percent of illegal immigrants are Mexicans fleeing unemployment, poverty, and high inflation in their country, where population is still growing rapidly. In the United States, concern over the influx of illegal immigrants prompted Congress to pass immigration reform legislation in October 1986. The new law contains three central provisions aimed at reducing the number of illegal aliens in the United States:

1) Employers who knowingly hire aliens not authorized to work in the U.S. will face civil penalties, such as fines and imprisonment.

2) Aliens who entered the U.S. illegally before January 1, 1982 will be granted temporary resident status. They can apply to become permanent resident aliens and later apply for citizenship.

3) Illegal aliens who worked at least 90 days in U.S. agriculture between May 1, 1985, and May 1986, will be given temporary resident status and after two years, can become permanent residents. In addition, the H2 program under which foreign farm workers are brought in temporarily for seasonal work will be simplified.

Advocates of the new law believe that it will reduce the number of illegal immigrants in the United States. At the same time, the agricultural provision will enable agriculture employers to maintain their cheap labor supply. Opponents argue that the sanctions on employers of illegal aliens may not be effective or will be difficult to implement. They also believe that the agricultural provision permits continued exploitation of farm labor, which could be done by Americans or legal residents if it were fairly paid. Many supporters of this legislation also feel that the legal immigration law should be altered; this issue was not dealt with in the 1986 legislation.

West Germany

In the past, West Germany was generous about accepting people seeking political asylum. Over the past three years, however, the number of asylum seekers has tripled; West German officials believe that many of these refugees are coming from Third World countries to earn a better living, rather than seek political asylum.

Refugees entering West Germany are allowed to remain until a trial is held to determine the validity of their status. During this time they receive a social-assistance allowance. Ultimately most requests for asylum are rejected, but it is estimated that fewer than half of rejected asylum seekers actually leave the country.

In order to keep an open door to those persons actually seeking political asylum, the West German government adopted several measures aimed against asylum seekers who come to West Germany to earn a more comfortable living. The measures include: 1) having more officials handling asylum applications; 2) extending from two to five years, the period during which asylum seekers cannot take a job (refugees from communist Eastern Europe are excluded); 3) fining international airlines who allow passenger entry into West Germany without proper documentation; and 4) expelling asylum seekers, who before entering West Germany, spent more than three months in another country where they were free from political persecution.

Groups in other European countries are also pressing for new immigration guidelines. Like West Germans, citizens of Switzerland and Sweden – countries where refugees have always been welcomed – are becoming skeptical with the recent increase of people from Third World nations seeking political asylum. Similar concerns are being voiced in Britain and France. These European nations are becoming less hospitable to refugees and other immigrants and are also taking steps to tighten immigration policies.

USING THE SIXTH EDITION UNITED STATES POPULATION DATA SHEET

Part A. Short Answer

Using the data and maps in the sixth edition of the United States Population Data Sheet, find:*

1. The five most populous states in 1985.
   a. The five most populous states in 2000.
2. The two largest (geographically) states.
   a. The two smallest (geographically) states.
3. The two most densely populated (most people per square mile) states.
   a. The two least densely populated states.
4. The two states which grew fastest (i.e., by the biggest percentage) between 1980 and 1985.
   a. The state which lost the greatest proportion of its population during this time period.
5. The state with the youngest population (i.e., the state with the highest percentage under age 15).
6. The state with the greatest percentage of elderly population.
7. The state with the highest number of births per 100 deaths.
   a. State the number of births per 100 deaths for this state and for the United States. Give at least two reasons why the number is so large for this state.
8. The state with the highest infant mortality rate.
   a. The state with the lowest infant mortality rate.
9. The state with the highest percentage of women in the labor force.
10. The region with the greatest proportion of Black residents.

Part B. Matching

1. Florida	a. has the highest percentage of college graduates
2. Colorado	b. has the highest percentage of high school dropouts
3. Louisiana	c. received the largest number of immigrants from abroad
4. Illinois	d. has the highest crime rate
5. California	e. one of the two states with the largest percentage of counties losing population

Part C. Follow-up

Using additional resources if necessary, find the answers to the following questions:

1. Utah has the youngest population of any state in the U.S. What causes this phenomenon?
2. The District of Columbia has a high dropout rate, but also has a high percentage of college graduates among persons over age 25. Find an explanation for this occurrence.
3. The maps on the back of the data sheet show net migration and population gain or loss. How is it possible for states which had out-migration to increase their population size?
4. Use the maps and other resources to explain the high infant mortality rates found in the southern states.

*The District of Columbia is not included as a state.

RESOURCES

Human Numbers, Human Needs, by Paul Harrison and John Rowley. 1984. International Planned Parenthood Federation, 18-20 Lower Regent Street, London SW1Y 4PW. 64 pp. $5.00.

A general reader for teachers and students stemming from reports of *People* magazine. Topics covered in the handbook include population growth and the effects of this growth on food, resources, the environment, health, education, and the economy.

Immigration to the U.S.: The Unfinished Story, by Leon F. Bouvier and Robert W. Gardner. *Population Bulletin*, Vol. 41, No. 4 (November 1986). Population Reference Bureau, 777 14th St. NW, Washington, D.C. 20005. 51 pp. $4.00 plus $1.00 shipping/handling.

A summary of the past immigration trends in the United States including an historical overview, and discussion of present trends, impact on the U.S. population growth, immigration law reform, and the outlook for the future.

Main Street America and the Third World, by John Maxwell Hamilton. 1986. Seven Locks Press, P.O. Box 27, Cabin John, MD 20818. 184 pp. $9.95.

Using a series of news stories that connect local events to distant foreign ones, the author successfully shows the concept of international interdependence. The book reveals the ties between American hometowns and Third World countries and provides students with schemes guaranteed to broaden their horizons.

Solving World Hunger: The U.S. Stake, by E. Boyd Wennergren et al. 1986. Seven Locks Press, P.O. Box 27, Cabin John, MD 20818. 102 pp. $7.95.

This book attempts to eliminate the information gap that exists among Americans about world hunger and the role and effectiveness of U.S. assistance programs. The reader is informed about all aspects of the food crisis and the role of U.S. assistance. In addition, the book contains information on educational programs designed to stimulate interest in this area.

The United States Population Data Sheet (sixth edition), by Carl Haub and Alexander von Cube. 1986. Population Reference Bureau, 777 14th St. NW, Washington, D.C. 20005. Wall chart, $2.00 plus $1.00 shipping/handling.

An 18½" by 24" wall chart with twenty-four columns of population data for the United States.

World Population in Transition, by Thomas W. Merrick. *Population Bulletin*, Vol. 41, No. 2 (April 1986). Population Reference Bureau (address above). 51 pp. $4.00 plus $1.00 shipping/handling.

A synopsis of world population issues including an historical overview and current trends. This bulletin includes the important debate about whether rapid population growth deters or stimulates economic growth.

World Hunger and Social Justice, by Gary E. McCuen. 1986. Gary E. McCuen Publications, Inc. 411 Mallalieu Drive, Hudson, Wisconsin 54016. 176 pp. $11.95.

From the Ideas in Conflict series, a collection of debates focusing on world hunger and its relationship to population growth, economic growth and foreign relations. This book gives the reader many points of view on each issue. Excellent as a classroom tool or a library resource. Extras include cartoon analysis and other exercises for individual or group discussion.

Answers to U.S. Data Sheet Worksheet

Part A. 1) CA, NY, TX, PA, IL. 1a) CA, TX, NY, FL, PA. 2) AK, TX. 2a) RI, DE. 3) NJ, RI. 3a) AK, WY. 4) AK, AZ. 4a) MI 5) UT 6) FL 7) AK 7a) 600 and 182, high proportion of people in childbearing ages; low percentage of elderly in this state. 8) SC 8a) ND 9) AK 10) South. Part B. 1) d 2) a 3) b 4) e 5) c.

PRB Materials and Memberships

Are you interested in rounding out your ***Population Education Interchange*** collection? Back issues of ***Interchange*** and the ***Population Learning Series*** modules are available for $2.00 each; two or more copies, $1.75 each. Titles include:

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- "The Environment to Come: A Global Summary," March 1983
- "Food and Population: A Global Concern," December 1983
- "The American Family: Changes and Challenges," October 1984
- "World Population: Fundamentals of Growth," December 1984
- "The Food Crisis in Sub-Saharan Africa," March 1985
- "World Population: Toward the Next Century," May 1985
- "Women in the World: The Women's Decade and Beyond," April 1986
- "Population in Perspective: Regional Views," October 1986
- "Global Population Trends: Challenges Facing World Leaders," February 1987

If you find ***Population Education Interchange*** interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only $28 per year, an Educator Member receives four issues of ***Population Education Interchange***, two ***Population Learning Series*** Modules, The ***World Population Data Sheet***, The ***U.S. Population Data Sheet***, four ***Population Bulletins***, 11 issues of ***Population Today***, and occasional issues of the ***Population Trends and Public Policy*** series.

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Interchange Is . . .

a publication of the Population Reference Bureau, published quarterly during the academic year. This issue was written by Kimberly Crews. The purpose of the newsletter is to further the goal of infusing population materials into the U.S. schools by (1) presenting information on population-related issues, (2) distributing classroom materials, (3) reviewing developments in the field of population education. Interchange depends upon an exchange of information and ideas and thus openly solicits correspondence from its readers.

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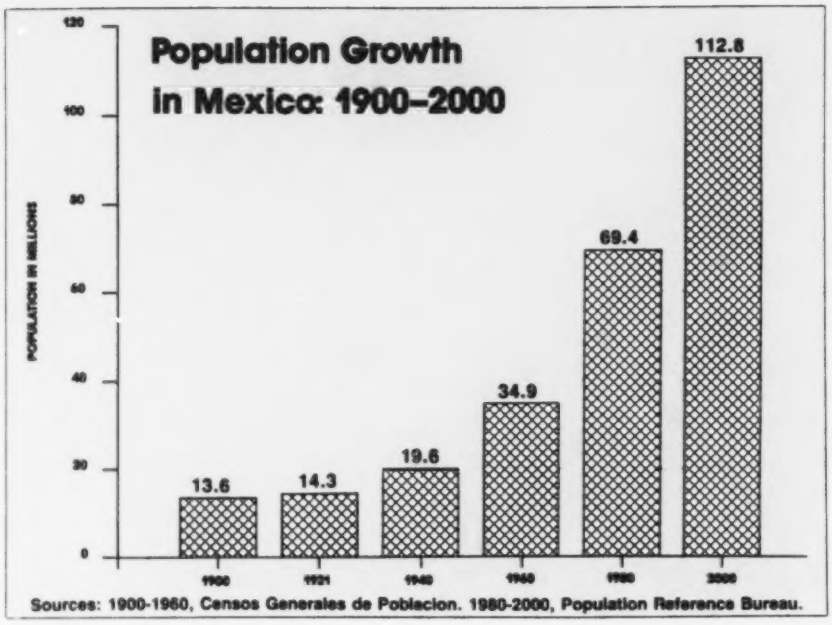
Mexico's Population: A Profile

Mexico's population is estimated at 82 million in 1987, making it the second most populous country of Latin America after Brazil (142 million). The population is growing at a rate of 2.6% a year, which if sustained would double in size in 27 years. Since 1940, Mexico's population has doubled twice; between 1940 and 1964 the population grew from 20 million to about 40 million, and in the last 23 years has again doubled to more than 80 million. Prior to 1940 growth was much slower. Between 1900 and 1940, the population grew from 14 million to 20 million; the average rate of growth during this period was 1%. The slower overall growth for these 40 years was mainly due to a large increase in mortality during the turbulent years of the Revolution from 1910 to 1920 and the influenza epidemic in 1918-19. However, natural increase was already relatively low because high death rates were offsetting relatively high birth rates. After 1940 the growth rate accelerated to 2.9% in 1950, and by 1970 it was 3.5%!

This demographic explosion is a classic example of what occurs when modern technology is suddenly infused into a traditional society: death rates decline rapidly due to improved health care and better living standards, while the birth rate remains high. Mexico's dramatic mortality decline is especially reflected in the drop in the infant mortality rate from 135 per 1,000 live births in the 1930s to 74 in 1960 and 53 in the 1980s. The significance of these trends was overshadowed by the phenomenal economic growth and political stability that Mexico experienced during the post World War II period. Because of the emergence of an urban-industrial economy which helped absorb the increasing numbers in the labor force, it was not until 1970 that the government realized that rapid population growth could deter future economic progress.

In 1973, the pronatalist law on population dating from 1947 was drastically revised, signaling the start of a series of direct and indirect measures to reduce population growth. These measures include family planning, communication and information service programs, sex education, and educational reform. The population policy includes steps to improve the status of women, provide more primary health care services, improve the geographic distribution of the population and achieve a growth rate of 1% by the year 2000. Policy implementation has had a certain measure of success: the total fertility rate declined from 6.7 births per woman in 1970 to about 4 in 1986, and the birth rate is down from 46 births per 1,000 population in 1970 to 32 in 1986. If the 1970 growth rate of 3.5% had persisted without government intervention, Mexico's population today might have been around 89 million.



Sources: 1900-1960, Censos Generales de Poblacion. 1980-2000, Population Reference Bureau.

ECONOMY

The high fertility of the past is reflected in Mexico's youthful age structure. Only 4% of the population are over age 64, whereas 42% are under age 15. This implies that the population will continue growing due to the large number of young women who have yet to enter their childbearing years. When they do they are likely to have fewer children than their mothers did, but because of their sheer number, their offspring will be numerous.

Also implicit in this age distribution is the enormous dependency burden that falls on the 54% of the population who are in the "economically productive" ages (15-64). Only 60% of this age group are in the labor force, that is, working or looking for work, and as many as half of these may be unemployed or underemployed. Yet they must support not only themselves, but also provide services such as education and health care as well as food, shelter, and clothing for those who are dependent. The youthful structure of Mexico's

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population also means than the number of new workers joining the labor force each year is increasing – in 1987 about 900,000 will be added. The labor force is growing by 3.4% annually, much faster than the total population is growing! The economy has been unable to keep up, generating far fewer jobs than is necessary to meet the needs of the ever increasing labor pool.

Labor force growth rates have varied in the different sectors of the economy. Traditionally, Mexico's labor was concentrated in agriculture, but as population growth increased after the 1940s, the amount of arable land available decreased. Consequently, younger people were soon leaving their villages in search of jobs elsewhere. About this time the country began industrializing, making migration to the urban industrial areas a viable alternative to the crowded conditions on the land. This trend has continued, so that the urban labor force is now growing faster than that of the agricultural sector.

Such demographic trends have serious implications for an economy that is already weak. Because of overcrowding on the land and poor farming methods, combined with natural disasters such as drought, earthquakes, and landslides, Mexico has been importing grains in increasing quantities since 1980. But even earlier, as a result of industrialization and the change in labor trends, per capita agricultural production had dropped. In 1983 Mexico imported close to half of its total grain requirements. The consequences have been serious as scarce foreign exchange has to be expended on imports to supplement domestic food production.

Mexico's current economic crisis began in 1982 with the drop in world prices for oil, which had been the country's chief source of foreign earnings. Subsequently, the rate of inflation accelerated, the peso was devalued, Mexico's fiscal position was weakened internationally as it acquired a deficit on balance of payments, and international monetary institutions refused to extend credit as interest rates grew. The earthquakes of 1985 further hindered the growth of the economy as resources were diverted to recovery efforts. While the government has been trying to reshape the economy, unemployment continues to affect a major portion of the labor force. In 1986, the Mexican government stepped up attempts to improve the economy. It is negotiating debt repayment with creditors, and in an effort to lower inflation, which is at an amazing 103%, reforms have been introduced to place a ceiling on wage increases and to reduce certain food subsidies, thus increasing the cost of staple diet items. Needless to say these measures have not been popular with the public.

Inter American Development Bank Photo

Mexico's plans for expanding employment opportunities include creating a more labor-intensive economy.

Current development plans emphasize the expansion of employment opportunities; in order to achieve this, the plan looks toward creating a more labor-intensive economy to absorb the abundant labor supply. Past development plans encouraged the growth of capital-intensive ventures, so that Mexico now has many heavy industries, commercial farms, and other large-scale, technology-oriented enterprises that are expensive to run and maintain, generate few employment opportunities, and have low productivity. Today, slow economic growth and capital scarcity make it difficult to create new industries that might provide some employment. Mexico's salvation might lie in the development of its agricultural sector, with emphasis on small farmers and grain production. This would be a source of employment, and would also increase food production so that food imports could be eliminated.

The situation is still bleak in 1987, but bankers have indicated their willingness to advance loans once again, reflecting their faith in the government's reform program.

MIGRATION

The Mexican labor force has reacted to the problems of unemployment and underemployment in an internationally significant manner. In 1986, the U.S. recorded 66,533 new legal immigrants from Mexico, many of them arriving in search of work. An estimated 1.5-3 million Mexicans live in the U.S. illegally.

Mexican workers have been migrating to the U.S. since the 1800s, but more are entering the U.S. now than ever before. Mexican labor has always been welcomed by U.S. employers because it is cheap and reliable. Between 1942 and 1964 this movement of labor was institutionalized in the *bracero* program initiated by the U.S. government, to admit Mexican agricultural laborers as guest workers. The program served the needs of both employers and laborers. When it ended, migration continued illegally and in even greater numbers as the Mexican labor force grew. Crossing the U.S.-Mexico border is currently perceived by Mexican laborers as the most expedient solution to their unemployment problems.

It is estimated that illegal Mexicans make up 3 to 6% of the U.S. labor force. Employers hire them because they are willing to work for low wages, but their availability on such terms keeps wages depressed, making these jobs unattractive to American workers.

The Immigration Reform and Control Act passed by the U.S. Congress in October 1986 includes a provision that places sanctions on employers who hire illegal workers. Supporters of the law believe that as a result of the sanctions, in the border areas at least, more jobs will be available to Americans and wages will be higher. In addition, social services in these areas will be less burdened. However, critics of the provision are not convinced that migration, which responds to the forces of the labor market, will be completely stopped. Moreover, the situation in Mexico is so critical that the possible rewards of working in the U.S. outweigh the consequences of being apprehended.

While Mexicans are crossing the border into the United States, people from neighboring Central American countries are crossing the Mexican border. Most are refugees such as the Guatemalan Indians who fled to Mexico in 1982 to escape Army massacres. Approximately 400,000 Central American refugees have remained in Mexico illegally, increasing Mexico's economic burden.

URBANIZATION

Migration from rural to urban areas is another way that Mexicans seek to escape poverty. Rural-to-urban migration can negatively affect the economy by leading to a drop in food production because the younger, more skilled workers find city life more attractive. Rapid urbanization usually puts severe strains on city housing, school systems, transportation, and medical facilities.

Mexico City is a prime example of over-urbanization. One of the largest urban areas in the world with a population of 18 million, Mexico City is projected to reach 26 million by the year 2000. Of the total Mexican population, 70% is located in urban areas and 31% of the urban population lives in Mexico City. The city's growth rate from natural increase and migration is about 4% a year.

Under the burden of its enormous population, Mexico City is deteriorating. Many people are forced to live in shantytowns where the quality of life is poor. With high pollution, lack of clean water, and unhygienic living conditions, infant mortality is high, and pollution-related diseases are on the rise.

THE FUTURE

Mexico succeeded in reducing its population growth rate from 3.5% in 1970 to 2.6% in 1987, falling somewhat short of its target of 2.5% by 1982. Projections for Mexico's population in the year 2000 vary according to the growth rates and fertility rates used, but assuming the growth rate falls to 1.7% and the total fertility rate to 2.7 births per woman, the population in 2000 will be 112.8 million. Of the total population, 58% will be in the economically active ages. By the year 2000 an estimated 77% of Mexico's population will reside in urban areas.

If this population growth is not accompanied by considerable economic and social progress, Mexico will still be faced with a stagnant economy and a labor force it is unable to employ. The effects will be most obvious in the urban areas where most of the projected population will be added.

The new immigration law introduced by the U.S. Congress adds a new dimension to Mexico's future. Mexicans fear that the return of thousands of workers will have severe repercussions on their economy, as the numbers of unemployed will increase. In addition, millions of families will suffer a loss of income; 21% of the population depends on these incomes for support. The loss of income also means losing a large source of foreign exchange, which is essential for an economy with a balance-of-payments deficit.

However, it would be unrealistic to think that illegal immigration can be completely eliminated by this law. When migration takes place out of a desperate effort to survive, and when there is a strong demand for low-paid labor as there is in the U.S., an immigration law is like a band-aid on a severed limb. Stronger structural changes, closer to the root of the problem, are needed: in this case a revival of the Mexican economy, using a determined population policy as one strategy. The United States can help by promoting development in Mexico and Central America. It has a vested interest because its proximity to the countries of this area makes it vulnerable to their fluctuations in fortune.

Inter-American Development Bank Photo

Will Mexico have jobs for them when they grow up?

Sources Consulted:

Alba, Francisco and Potter, Joseph. "Population and Development in Mexico since 1940: an Interpretation", *Population and Development Review*, Vol. 12, No. 1 (March 1986), pp. 47-75.

Bouvier, Leon and Simcox, David. *Many Hands, Few Jobs: Population, Unemployment and Emigration in Mexico and the Caribbean*, CIS Paper No. 2 (Washington, DC.: Center for Immigration Studies, 1986).

Saunders, John, ed. *Population Growth in Latin America and U.S. National Security* (Boston: Allen & Unwin, Inc., 1986).

Smith, Peter H. *Mexico: Neighbor in Transition*, Headline Series No. 267 (New York: Foreign Policy Association, 1984).

RESOURCES

Immigration to the U.S.: The Unfinished Story, by Leon F. Bouvier and Robert W. Gardner. *Population Bulletin*, Vol. 41, No. 4 (November 1986). Population Reference Bureau, 777 14th St. NW, Suite 800, Washington, DC. 20005. 50 pp. $4.00 plus $1.00 shipping/handling.

A summary of the past immigration trends in the United States including a historical overview, present trends and their impact on U.S. population growth and society, immigration law reform, and the outlook for the future.

Mexico: Neighbor in Transition, by Peter H. Smith. 1984. Headline Series No. 267. Foreign Policy Association, 205 Lexington Ave., New York, NY. 10016. 79 pp. $4.00.

This text describes Mexico's socioeconomic and political development from its days as a colony to the present, and its relations with the U.S. Discussion questions and reading list provided.

Population Pressures in Latin America, by Thomas W. Merrick with PRB staff. *Population Bulletin*, Vol. 41, No. 3 (July 1986). Population Reference Bureau, 777 14th St. NW., Suite 800, Washington, DC. 20005. 50 pp. $4.00 plus $1.00 shipping/handling.

A description of population growth and related trends in Latin America as industrialization took place. Includes a discussion of population in relation to economic growth and the pressures that lead to a decline in fertility.

Latin America's Supercity – the Metropolitan Area of Mexico City, by Ralph Hakkert, *International Demographics*, Vol. 6, No. 2 (February 1987). American Demographics, Inc. PO. Box 68, Ithaca, NY. 14851.

This issue of *International Demographics* features an 8 page discussion of Mexico City. It includes a discussion of the city's problems in providing jobs and urban services for its ever-increasing population.

Audiovisual Resources

Mexico in the Year 2000, 1979, 12 minutes, 16mm.

Produced in cooperation with the Mexican government, this film describes the rapid increase in the population of Mexico since 1900 and the difficulties Mexico will have in providing jobs, food, education, and housing for the population in the year 2000.

Immigration: What We Promised, Where to Draw the Line, 1986, 15 minutes, ¾" or ½" video.

The film discusses America's attraction for immigrants, and the effects these immigrants have on America and Americans. It addresses questions and issues that are difficult, but must be faced.

Lessons for the Future, 1980, 17 minutes, 16mm.

Produced at the request of the Mexican government, this film documents the educational community's involvement in the national population program. Case studies of three teachers are presented which highlight the discussions they have with their students about family planning.

The rental fee is $10.00 per film, or videotape. A catalog for the film library is available upon request. Write: Film Librarian, PRB, 777 14th St. N.W. Suite 800, Washington, D.C. 20005.

FOR FURTHER RESEARCH

1. Each year thousands of Mexicans enter the U.S. in search of jobs. Why is the Mexican economy unable to generate enough jobs for its population?
2. Conduct a historical examination of the U.S. migrant labor programs and immigration laws. How have they affected movement between the U.S.-Mexico border?
3. Demographic transition refers to a shift in birth and death rates from high to low levels in a population. The decline of mortality usually precedes the decline in fertility, thus resulting in rapid population growth during the transition period. How is Mexico's transition different from that experienced by the U.S.?
4. How has the religious composition of Mexico affected population policy?
5. Research Mexico's other urban areas. Are they growing as fast as Mexico City? Are they facing problems similar to those in Mexico City?

PRB Materials and Memberships

Are you interested in rounding out your ***Population Education Interchange*** collection? Back issues of ***Interchange*** and the ***Population Learning Series*** modules are available for $2.00 each; two or more copies, $1.75 each. Titles include:

- "Immigration: Questions and Answers," July 1982
- "The Environment to Come: A Global Summary," March 1983
- "Food and Population: A Global Concern," December 1983
- "The American Family: Changes and Challenges," October 1984
- "World Population: Fundamentals of Growth," December 1984
- "The Food Crisis in Sub-Saharan Africa," March 1985
- "World Population: Toward the Next Century," May 1985
- "Women in the World: The Women's Decade and Beyond," April 1986
- "Population in Perspective: Regional Views," October 1986
- "Global Population Trends: Challenges Facing World Leaders," February 1987

If you find ***Population Education Interchange*** interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only $28 per year, an Educator Member receives four issues of ***Population Education Interchange***, two ***Population Learning Series*** Modules, The ***World Population Data Sheet***, The ***U.S. Population Data Sheet***, four ***Population Bulletins***, 11 issues of ***Population Today***, and occasional issues of the ***Population Trends and Public Policy*** series.

To join, send your name, address (and school affiliation, if different from address), and check to: Population Reference Bureau, PO. Box 96152, Washington, DC. 20090-6152.

Interchange Is. . .

a publication of the Population Reference Bureau, published quarterly during the academic year. This issue was written by Neena Paul. The purpose of the newsletter is to further the goal of infusing population materials into the U.S. schools by (1) presenting information on population-related issues, (2) distributing classroom materials, (3) reviewing developments in the field of population education. Interchange depends upon an exchange of information and ideas and thus openly solicits correspondence from its readers.

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Teaching Environmental Connections

As world population tops the 5 billion mark, the effects of human interactions with the environment become even more prominent. We see the short-term consequences of events such as the Chernobyl nuclear reactor accident and the Rhine river chemical spills, whose long-term effects have yet to manifest themselves. Events such as these, whose damage spreads over many nations, make us aware of our vulnerability to the actions of other countries. We also see some of the longer-term effects of some of our actions, such as air pollution, acid rain, deforestation, and soil erosion. Damage to the environment, whether taking place over several decades or a few minutes, potentially affects the future health and well-being of all living things.

The *Population Learning Series*, "Human Needs and Nature's Balance: Population, Resources, and the Environment," which accompanies this issue of *Population Education Interchange*, contains an assessment of global trends in population growth, food production, water use, and energy consumption. The assessment leads to an examination of environmental impacts and prospects for the future of food production, as well as related issues involving water and energy resources. The United Nations International Drinking Water Supply and Sanitation Decade and the fuelwood resource situation are highlighted in this module. The reading concludes with a sample of ingredients necessary to deal with environmental concerns.

The essay is followed by a glossary, review exercises, and a list of additional resources for student and teacher research. The review activities require prior reading of the module. Additional activities, answers to the review activities, a list of environmental textbooks, and other teaching resources can be found in this guide.

EPA

Human actions often have an unfortunate impact on the environment

Guide to *Human Needs and Nature's Balance*

Research Questions

The following can be used as research or project topics for more in-depth study of population, resource, and environment issues. Refer your students to the references and list of resources at the end of "Human Needs and Nature's Balance" for help in researching these topics.

1. Choose a country and an environmental problem important to that country or a region in the country. What steps are being taken to solve this problem? What groups are participating in these actions (e.g. local, national, international, etc.)? Have these actions been successful? Why or why not? If the actions have been unsuccessful, discuss their limitations. What types of actions do you believe would be successful?

2. What factors attract people to urban areas? What factors drive people from rural areas? Discuss these "push-pull" factors as they relate to a specific region in any country. How has urban population growth affected the environment in this region?

3. Choose a country. Research the agricultural policies adopted in the past 10 years. Have these policies helped to improve output? How have they affected both large-scale and small-scale farmers? Have they had a positive or negative impact on the environment?

4. What are the possibilities for further development and use of wind, solar, and geothermal energy resources? What factors inhibit the use of these resources?

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5. What factors contribute to the difference in daily water use between more developed and less developed countries? Compare water usage in the United States to that of a less developed country. What are the differences? What roles do lifestyles and availability of water resources play?

Answers to Review Activities

Below you will find the answers to factual questions from the review activities found in "Human Needs and Nature's Balance: Population, Resources, and the Environment."

Part A. Short Answer.
1) 10.2 2) 90 3) 57, 31 4) True 5) erosion; waterlogging of soil; depletion of groundwater; diminishing plant varieties; chemical pesticides and fertilizer cause pollution, threaten health, contaminate food and soil, harm non-pest species, destroy pests' predators, encourage development of pesticide-resistant pest species 6) erosion, deforestation, desertification, reduction of soil fertility 7) Surpluses often depress the price of food and therefore reduce the incentive to improve crop yields. 8) irrigation 9) There have been small improvements in the proportions of people with access to a water supply and sanitation services. Many countries have formulated plans for improvement. The Decade has created awareness at national and international levels of the importance of safe water and sanitation for health. 10) The build-up of CO_2 leads to warming of the atmosphere, air pollution, water pollution, acid rain. 11) wood, dung, crop residue, oil 12) It is important to realize the interconnectedness of population growth, resource use, and political actions. National and international involvement, including all possible interest groups, is important.

Part B. Data Analysis.
1) LDCs, 2100 85-90%, 2000 80-85%, 1950 60-65%. MDCs, 2100 10-15%, 2000 15-20%, 1950 35-40% 2) Latin America 3) Because Asia makes up 75 percent of the less developed region its trends dominate the region. 4) North America and Australia, industrial agriculture; Latin America, "Green Revolution" and traditional; Asia and North Africa, "Green Revolution"; Sub-Saharan Africa, traditional. Excessive grazing and deforestation are also contributors in some regions. Have your class discuss where this might occur. 5) Water supply: least, rural Africa; most, urban Western Asia. Sanitation: least, rural Asia and Pacific; most, urban Western Asia. 6) Developed Countries: Oil, 36.6; Nat. Gas, 16.1; Coal, 23.3; Hydro, 8.4; Nuclear, 15.6. Less Developed Countries: Oil, 49.5; Nat. Gas, 22.7; Coal, 9.5; Hydro, 15.4; Nuclear, 2.8. Centrally Planned: Oil, 25.9; Nat. Gas, 30.2; Coal, 35.4; Hydro, 5.0; Nuclear, 3.6.

ATTENTION

In honor of its 20th anniversary in 1988, Zero Population Growth (ZPG) is sponsoring a poster challenge and essay contest with prizes for students and their teachers. The Poster Challenge is for elementary school students; the Essay Contest is for students in grades 7-12. Deadline for entries in both contests is February 4, 1988. For official contest rules write to: ZPG Essay Contest, or ZPG Poster Challenge, 1601 Connecticut Avenue, N.W., Washington, D.C. 20009.

RESOURCES

Environmental Texts
College Level

Environment of Life, 4th ed. By Kenneth E. Maxwell, Greayer Mansfield-Jones and Dorothy Mansfield-Jones. Brooks/Cole Publishing Co., Wadsworth, Inc., 10 Davis Drive, Belmont, Calif. 94002. 1985, 349 pp.

This text relates environmental science to human activities, providing a foundation of scientific principles and facts on which an understanding of environmental problems and their solutions can take place. The first of five parts contains a discussion on the nature of the environment – the biosphere, ecology, and population dynamics. The other sections focus on human populations and conservation, the effects of the environment on health, the quality of our environment, and finally, the supply and demand of energy resources. The epilogue highlights the effects of human demand on the environment.

Environmental Science, 3rd ed. By Jonathan Turk and Amos Turk. Saunders College Publishing, 383 Madison Avenue, New York, NY 10017. 1984, 544 pp.

This text illustrates how environmental issues are affected by science, economics, and politics. It is organized into six self-contained units: the first three provide background information on environmental science, ecology, and the relationship between humans and the environment; the last three units focus on resources including energy, soil, land, minerals, air, and water. Each chapter concludes with a synopsis, study questions, and reading list. An epilogue contains a discussion of options to consider in planning for a sustainable society. Seven appendices, a glossary, and a collection of take-home experiments are also included. An **Instructor's Manual** is provided.

Environmental Science: The Way the World Works, 2nd ed. By Bernard J. Nebel. Prentice Hall, Inc., Div. of Simon & Schuster, Englewood Cliffs, N.J. 07632. 1987, 671 pp.

Written for the non-science major, this text opens with an explanation of science and scientific methods of particular interest to environmental science. Six sections, each containing an introduction, focus on ecosystems, population, soil and water, pollution, pests and pest control, and resources, respectively. Every chapter is hierarchically organized for a clearer understanding of topics, and is accompanied by study questions. All new terms are introduced in boldface type and are listed in the glossary provided at the end of the book. Three appendices provide a listing of environmental organizations, units of measure, and basic chemical concepts. The bibliography provides a useful list of additional reading materials. This text is accompanied by a **Student Study Guide** and an **Instructor's Manual.**

Introduction to Environmental Science, 2nd ed. By Joseph M. Moran, Michael D. Morgan, and James H. Wiersma. W.H. Freeman & Co., 41 Madison Avenue, New York, NY 10010. 1986, 709 pp.

The text opens with an introduction of environmental problems in the context of science, economic, and public policies. The remainder is divided into three parts, with the first discussing basic ecological concepts as a preliminary to applying these concepts to issues dealt with in the two remaining parts. The second section is concerned with the quality of the environment and its management. Part III deals with the most fundamental of environmental issues: population growth and food and energy resource scarcities. Each chapter concludes with a synopsis, review questions, projects, and a reading list. A glossary and three appendices containing scientific conversion factors, the geological time scale, and numbers expressed as powers of ten round out the text. An **Instructor's Manual** accompanies this text.

Living in the Environment: An Introduction to Environmental Science, 4th ed. By G. Tyler Miller, Jr. Wadsworth, Inc., 10 Davis Drive, Belmont, Calif. 94002. 1985, 460+ pp.

A brief description of the relationship between population, resources, and pollution opens the text. The next five sections contain detailed discussions of ecology, population, resources, pollution, and the relationship between the environment and society. "Enrichment studies," short essays on specific topics, include coverage of birth control methods, the food additives controversy, and how to influence elected officials, to name a few. These provide the instructor with additional examples and open up further avenues of discussion and debate. Chapters and essays conclude with questions for further study. The book contains a glossary and lists of periodicals, environmental organizations, government agencies, and unit conversions. **Student Guide, Instructor's Manual,** and **Transparencies** for some of the major illustrations can be purchased separately.

Environmental Science: An Introduction, by G. Tyler Miller, Jr. Wadsworth, Inc., 10 Davis Drive, Belmont, Calif. 94002. 1986, 400 pp.

A shorter version of **Living in the Environment,** this book has five main sections discussing the relationship between humans and nature, describing basic ecological concepts, dealing with the dynamics and control of human populations, and focusing on resources and pollution. An essay on achieving a sustainable society forms the epilogue. This text also contains a glossary, a list of suggested readings and seven appendices listing periodicals, units of measure, and other useful information.

High School Level

Global Science: Energy, Resources, Environment, 2nd ed. By John W. Christensen. Kendall Hunt Publishing Co., Dubuque, Iowa. 1987, 355 pp.

The Global Science set is a complete curriculum which can serve as a basic science course or can be incorporated into existing courses. It presents energy, resource, and environmental issues from a scientific perspective, stressing student involvement through classroom and laboratory activities. Each of the ten chapters includes pre-reading vocabulary and questions, activities, and review questions. A glossary and seven appendices providing scientific notations, conversion factors, and other useful information are included. The accompanying **Teacher's Guide** is comprehensive, listing films and other resources relevant to the text as well as prices and distributors. Laboratory equipment is similarly listed. The **Laboratory Manual** contains 75 activities to be performed in and out of the laboratory.

What's Ecology? by Lawrence W. McCombs and Nicholas Rosa. Addison-Wesley Publishing Co., One Jacob Way, Reading, Mass. 01876. 1986, 248 pp.

Beginning with a description of the concept of ecology, the text continues with a discussion of natural ecosystems, their organization and limits, and human influence on these systems. The last four chapters focus on the conservation of natural resources, human populations and their growth, their habitats (including the city as an ecosystem), and a consideration of technology from an ecological viewpoint. Each of the 13 chapters includes test questions and the book ends with a list of suggested readings. A **Teacher's Manual** is also available.

Non-Text Resources

The **Energy Consumption and Population Growth Rates** map which was included in the October mailing is from a new United Nations publication, **Population Images,** which examines the demographic aspects of development issues. The graphs and maps in the book depict population and environmental topics including urban and rural distribution, population size and growth of world regions, and deforestation in Central America. Each of the 15 color graphs/maps includes explanatory text. Information for ordering **Population Images** is on the enclosed material.

Switching on to the Environment: A Critical Guide to Films on Environment and Development, by the International Television Trust for the Environment (TVE). London, UK. Price $9.00. To order, write TVE-USA, c/o 2013 Q Street, NW, Washington, DC 20009, or telephone (202) 234-4600.

The first of its kind, this useful guide lists about one hundred of the best films on environmental crises that affect not only the developing world, but also the industrialized countries of the West. Film topics include the urban crisis, atmospheric pollution, desertification, and deforestation, among others. The guide provides a synopsis of each film and mentions special merits of the film. Many of the films are from international sources, and a list of distributors and ordering information (for rental and purchase) is provided.

CORRECTION

In the May 1987 issue of *Population Education Interchange*, "Mexico's Population: A Profile," an incorrect statement was made on page 2. In column 3 we first stated that 1.5 to 3 million Mexicans lived in the U.S. illegally. We later stated that these illegal immigrants made up about 3 to 6 percent of the U.S. labor force. The latter figure includes other foreigners working in the U.S. without legal authorization. Illegal Mexican immigrants actually represent less than 2 percent of the U.S. labor force.

Audiovisual Resources

The audiovisual programs listed below are available for rental from the PRB Population-Environment Film Library. New additions to the library are indicated by an asterisk (*).

The Great Energy Debate (Critical Issues in Science and Society). 1976, 40 minutes. **Slide/tape.**

This program raises ethical issues implicit in the exploitation of new areas of fossil fuel supply (e.g., the Alaskan Pipeline). It points out that the development of non-fossil fuel sources depends on complicated factors.

***Natural Resources.** 1984, 36 minutes. **½" VHS.**

Are the world's resources limited or not? Does the United States with 6% of the world's people deserve praise or blame for using 40% of the world's resources? Students are presented with the conflicting opinions of experts, and are challenged to investigate further to develop informed opinions.

Our Natural Resources: Where Will We Find Them Tomorrow? 1981, 40 minutes. **Slide/tape.**

The program introduces the idea that our resources are limited and that they have been affected by increasing population, waste, and pollution. It examines efforts to preserve adequate supplies of these resources.

***The Promise of the Land.** 1987, 58 minutes. **¾" or ½" VHS.**

One of the Smithsonian World television series, this film discusses modern industrialized methods of agricultural production that have increased output tremendously, but are having ill effects on the soil. Farmers and scientists are interviewed about the "benefits" of modern agricultural practices.

Renewable Energy Resources: Wind, Water and Solar Rays. 1980, 46 minutes. **Slide/tape.**

The program introduces students to existing and projected renewable energy resources and analyzes the potential of each resource to contribute to our energy needs.

***The Silent Explosion.** 1987, 20 minutes. **¾" or ½" VHS.**

This film focuses on the consequences of overpopulation on the world's economies, environments, and food supplies, and also provides examples of solutions with footage from developing countries. An excellent tool for stimulating student discussion and increasing awareness of the issue of overpopulation. Produced by the Population Institute.

***What is the Limit?** 1987, 23 minutes. **½" VHS.**

An in-depth look at the interrelationships between population, environment, and development issues. Concludes with discussion of the political and ethical issues concerning population growth. Produced by the National Audubon Society.

***Will the World Starve?** 1986, 57 minutes. **¾" and ½" VHS.**

Part of the NOVA series, this film focuses on how soil erosion contributes to starvation. Using agricultural development projects in different developing countries as examples of successful land management programs, the film shows how farming practices can cause degradation of the land and how government policies can help remedy the situation.

A World to Feed (Critical Issues in Science and Society). 1976, 40 minutes. **Slide/tape.**

By focusing on individual human beings in various countries, the program helps students understand the implications of the attempts to relieve worldwide food shortages, including the possibility of discouraging population growth. It also examines the massive use of cereal grains as animal feed in this country.

The rental fee is $10.00 per film, videotape, or slide program. Send your orders to: PRB Film Library, 777 14th St. NW., Suite 800, Washington, DC. 20005.

For a complete listing of audiovisual aids and purchase information send a self-addressed, stamped envelope for a free copy of the new **Fall 1987** film catalog.

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- "Mexico's Population: A Profile," May 1987
- "Nature's Checks on Population Growth," December 1986
- "A Potpourri of Population Puzzles," May 1986
- "A Guide to Classroom Software," December 1985
- "The Food Crisis in Sub-Saharan Africa," March 1985
- "Charting World Population Change," June 1984
- "Population Education: Tools for Teachers," March 1984
- "Hispanics in the United States," October 1983

Back issues of the *Population Learning Series* modules, which are accompanied by an issue of *Interchange*, are also available for $2.00 each; two or more copies, $1.75 each. See a list of titles on the back page of the Population Learning Series.

If you find ***Population Education Interchange*** interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only $28 per year, an Educator Member receives four issues of ***Population Education Interchange***, two ***Population Learning Series*** Modules, The ***World Population Data Sheet***, The ***U.S. Population Data Sheet***, four ***Population Bulletins***, 11 issues of ***Population Today***, and occasional issues of the ***Population Trends and Public Policy*** series.

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a publication of the Population Reference Bureau, published quarterly during the academic year. This issue was written by Kimberly A. Crews and produced by Marjorie B. Dahlin and Tracey A. Smith. The purpose of the newsletter is to further the goal of infusing population materials into the U.S. schools by (1) presenting information on population-related issues; (2) distributing classroom materials; and (3) reviewing developments in the field of population education. Interchange depends upon an exchange of information and ideas and thus openly solicits correspondence from its readers.

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Where is the Metropolitan U.S.?

About 75 percent of the U.S. population reside in urban areas. Coincidentally, about 75 percent of the U.S. population reside in metropolitan areas. However, it is possible for a person to live in an area which is urban but not metropolitan. And it is also possible to reside in a rural area that is metropolitan. The **Metropolitan U.S. Data Sheet,** published this month, gives the figures for population size, change, and other demographic variables for the metropolitan areas in the U.S. This essay examines the current trends of growth of metropolitan areas. However, for a better understanding of the **Data Sheet** figures and discussion of the current trends, it is first necessary to wade through the definition of a metropolitan area. This will help to explain where the metropolitan areas of the United States are and exactly what being "metropolitan" means.

What is a Metropolitan Area?

A metropolitan area is essentially a big city and its independent suburbs, defined by using counties as building blocks. Since whole counties are included or excluded, there may well be parts of those counties which are rural in character.

The U.S. Bureau of the Census defines a Metropolitan Statistical Area (MSA) as a county containing a city of 50,000 or more population, using legal boundaries to define the city. However, because cities often sprawl beyond their actual boundaries, a county containing an Urbanized Area (UA) of 50,000 or more population and where the total metropolitan area is 100,000 or greater can also be classified as an MSA. (The distinction between an Urbanized Area and a city is made because some cities have legal boundaries which are quite small compared to their actual built-up area. The UA includes the city proper and the continuously built-up area around it and disregards other boundaries.) An MSA can be as small as a county, but can also be made up of several counties. As the map on the next page shows, the Lansing-East Lansing MSA in Michigan is made up of three counties.

In the case where one MSA happens to be near a larger MSA, but is socially and economically independent, the two (or more) MSAs are combined and called a Consolidated Metropolitan Statistical Area (CMSA). A CMSA must contain 1 million or more population **and** contain a qualifying Primary Metropolitan Statistical Area (PMSA) within it. A Primary Metropolitan Statistical Area is always part of a CMSA.

A county or group of counties may qualify as a PMSA if local opinion supports separate recognition of a county or group of counties demonstrating a relatively independent existence within the metro complex **or** if the area had

Kimberly Crews

Both of the above environments are included in a Metropolitan Statistical Area, as defined by the U.S. Bureau of the Census.

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been recognized as a metro area as of January 1, 1980. So a PMSA could possibly be a metro area in its own right had it not been part of the CMSA. The Detroit-Ann Arbor CMSA shown above is an example of a CMSA with two PMSAs – Detroit and Ann Arbor. All together, this CMSA is made up of eight counties. Detroit is the central city in this CMSA and the other counties (excluding Washtenaw where Ann Arbor is located) are economically dependent upon Detroit.

A CMSA is the largest kind of Metropolitan Statistical Area. However, the definition of metros is further classified from Level A, areas of 1 million or more, to Level D, areas of less than 100,000. This hierarchy allows one to make the distinction between large metro areas such as the New York CMSA with 17.9 million people and the Enid, Oklahoma MSA with 62,900.

To repeat a few key points, a Metropolitan Statistical Area may be comprised of one or more counties, can cross state lines, and must contain a city or Urbanized Area of 50,000 or more (with certain restrictions). The population of the whole county (or counties) is included in the MSA even if part of the county is rural. A Consolidated Metropolitan Statistical Area must have over 1 million population and contain at least one Primary Metropolitan Statistical Area. The definitions of MSAs contain additional restrictions, clarifications, and special cases which can be found in the Census Bureau documentation (see sources below).

Current Trends in Metropolitan Growth

Since 1980, metropolitan area growth has been faster than growth in nonmetropolitan areas. The reverse was true in the 1970s. Metropolitan area growth trends follow the overall U.S. growth patterns: slow or declining growth in the Northeast and Midwest and more rapid growth in the South and West. All 50 of the fastest-growing MSAs in the 1980s are located in the South and West. Ninety-five of the 100 fastest-growing MSAs are located in the South and West.

Eighteen CMSAs had over 2 million people in 1986. Nine are located in the Northeast and Midwest regions and nine in the South and West regions. While eight of the nine in the Northeast and Midwest regions grew less than 1 percent annually or lost population between 1980 and 1986, eight of the large CMSAs of the South and West experienced gains of over 1.5 percent.

Nearly half (48 percent) of the U.S. population live in metropolitan areas of more than 1 million population. However, smaller MSAs are growing more rapidly (in terms of percentage change) than the large metro areas. Within MSAs suburban area growth is increasing more rapidly than central city growth, although the rate of suburban growth has slowed since the 1970s. Suburban growth has made a great impact on patterns of life in metropolitan areas.

Suburban areas are no longer as dependent on central cities for jobs or to meet other economic needs. Because of improvements in communication and transportation, corporations, particularly those which depend on a white collar labor force, have been able to move to suburban areas. The subsequent build-up of shopping malls and other service centers has increased the economic split between central cities and their suburbs.

In the past, the majority of suburban towns really were "dormitory communities"; the labor force commuted to the central city. Now the bulk of the traffic in many metropolitan areas moves within suburbs or between suburbs; there are even some flows from central city to suburb. Many suburbanites never venture into the central city.

Because the roads in suburban areas were not built to accommodate this traffic load, growth has often resulted in severe traffic congestion. Today it is not unusual to find a traffic jam 20 miles away from the central city. Another outcome of the movement of corporations is that service sector and/or "blue-collar" jobs previously offered to lower-income residents of central cities often disappear. It is not uncommon to find a high unemployment rate among inner-city minority youth, while low-paying, generally service-sector jobs in suburban areas remain unfilled.

Fastest and Slowest Growing Metropolitan Statistical Areas 1980-1986

10 MSAs with Greatest Gains	Percent	10 MSAs with Greatest Losses	Percent
1. Naples, FL	41.2	1. Duluth, MN-WI	−8.7
2. Ocala, FL	39.6	2. Elmira, NY	−7.3
3. Fort Myers-Cape Coral, FL	36.0	3. Peoria, IL	−7.0
3. Fort Pierce, FL	36.0	4. Waterloo-Cedar Falls, IA	−6.9
5. Amarillo, TX	35.3	5. Muncie, IN	−6.0
6. Anchorage, AK	34.7	6. Beaver County, PA	−5.5
6. Midland, TX	34.7	6. Parkersburg-Marietta, WV-OH	−5.5
8. Melbourne-Titusville-Palm Bay, FL	32.3	8. Wheeling, WV-OH	−5.4
9. West Palm Beach-Boca Raton-Delray Beach, FL	31.0	9. Cumberland, MD-WV	−5.2
10. McAllen-Edinburg-Mission, TX	29.1	10. Buffalo, NY	−5.0

In the future, metropolitan areas will probably continue to expand, particularly in the South and West, stretching further away from the original central cities and gobbling up additional counties. With continued suburban growth, more metropolitan areas will develop multiple business districts as corporate expansion reduces dependence on the central cities. As this expansion continues, it may become impossible to distinguish one metropolitan area from another.

Will this evolution cause the definition of "metropolitan" to become less meaningful? At present many metropolitan areas contain a large amount of farmland. Are other nonmetropolitan areas likely to be classified as metropolitan given the fact that much rural territory is already included in the metropolitan classification? And if many more nonmetropolitan areas do become metropolitan, will the significance of this "metropolitan" label be diminished? Where would one metropolitan area end and another begin?

References

Haub, Carl. "The Last Metro (Definition)?" *Population Today*, Population Reference Bureau, November 1985.

U.S. Bureau of the Census, *1980 Census of Population*, Supplementary Report, "Metropolitan Statistical Areas," PC80-S1-18, U.S. Government Printing Office, Washington, D.C.

Discussion Questions

1. Is the county in which you reside a single-county metropolitan area, part of a multi-county metropolitan area, or a nonmetropolitan area? If you live in a metropolitan area complete the remaining questions in this section.
2. Determine the type of metropolitan area in which you reside (CMSA, PMSA, or MSA).
3. Use the **Metropolitan Data Sheet** to determine the population of your metropolitan area.
4. Find out how much of the population in your metropolitan area resides in the central city or urbanized area which allows it to be classified as metropolitan.
5. Do you live in the central city or outside of the central city?
6. Have the suburban areas in your metropolitan area become home to more businesses? If so, why? How has the influx of businesses affected traffic patterns, shopping, congestion, and job availability? Has the increased development changed commuting times (rush-hour and non-rush-hour trips)?
7. Comment on how increased development in suburban areas has affected the central city in terms of traffic patterns, businesses, tourism, shopping, and employment opportunities.

Take a Survey

Determine the commuting patterns of the families in your school by finding out where families live and work. Students can take home a questionnaire for their parents. Combine the responses and analyze the commuting patterns for your community.

OR

Students can take a random survey within the community, perhaps at a shopping center. Where do people live and work (suburb, central city, nonmetropolitan area)? Do the trends in the group surveyed follow U.S. trends? If not, try to explain the reason for any deviations.

Using the U.S. Metropolitan Data Sheet

1. Select four Metropolitan Statistical Areas that are similar in population size, one from each geographic region (e.g. Buffalo, NY; Columbus, OH; New Orleans, LA; and Portland-Vancouver, OR-WA). Compare the growth rates, minority population (black and Hispanic), and two other variables of interest to you.
2. Do the rates of growth for the individual regions follow the patterns described in the above essay? What do you think accounts for any similarities, differences, or deviations from the U.S. trends?
3. What accounts for any similarities or differences in the variables between the metropolitan areas that you have selected?
4. Compare the same variables as in #1 for several metropolitan areas within your state (or region if your state has only a few metropolitan areas). What do you think accounts for any similarities, differences, or deviations from the U.S. trends?

RESOURCES

Metropolitan Resources

State and Metropolitan Area Data Book, 1986, by the U.S. Bureau of the Census. 1986. U.S. Goverment Printing Office Washington, D.C.

A wide variety of information on the States and metropolitan areas in the United States. The data presented come from nearly 50 federal and private agencies.

Statistical Abstract of the United States: 1987 (107th Edition), by the U.S. Bureau of the Census. 1986. U.S. Government Printing Office. Washington, D.C.

Published since 1878, this abstract contains a summary of statistics on the social, political, and economic organization of the U.S. Convenient for statistical reference and as a guide to other statistical publications and sources.

United States Metropolitan Data Sheet, by Carl Haub and Machiko Yanagishita. 1987. Population Reference Bureau, 777 14th St. NW, Washington, D.C. 20005. Wall Chart, $2.00 plus $1.00 shipping/handling.

An 18½" × 24" wall chart with 11 columns of population data for the metropolitan areas in the United States.

Audiovisual Resources

U.S. Cities (Growth and Development), 1984. 16 minutes, 16mm or VHS. Encyclopaedia Britannica Educational Corporation, 425 North Michigan Avenue, Chicago, Illinois 60611. Includes a viewer's guide. **16mm $440, VHS $350.**

This film traces the growth of U.S. cities from the towns and cities of colonial times to the megalopoli of today. It shows the relationship of city growth to the development of transportation, technology, and commerce.

New in the A-V Library

The audiovisual programs listed below are available for rental from the PRB Population-Environment Film Library. The rental fee is $10.00 per film, videotape, or slide program. Send your orders to: PRB Film Library, 777 14th St. NW, Suite 800, Washington D.C. 20005.

The Business of Hunger. 1986. 28 minutes. **½" VHS.**

This film challenges the traditional assumptions about hunger by suggesting that enough food is grown on earth to feed its entire population, and that agribusiness practices are one of the causes of hunger. It describes how peasants lose their land to multinational corporations that make huge profits by replacing food crops with cash crops. Related issues such as migration to cities are also touched upon.

Child Survival: The Silent Emergency. 1985. 58 minutes. **½" VHS.**

This moving film tracks the progress of the Child Survival Revolution led by the United Nations Children's Fund (UNICEF). The Revolution, launched in late 1982, uses the following strategies to combat child mortality: growth monitoring, oral rehydration, breastfeeding education, and immunization. The presentation does an excellent job of showing the relationship between child mortality and overall world population growth and the importance of the status of women as a factor in the health of a society.

Population Change and Economic Development. 1987. 25 minutes. **¾" U-matic & ½" VHS.**

Based on the World Bank's 1987 report, *Population Change and Economic Development*, this film makes very clear the connections between these two processes. The film opens with a graphic display of the historical growth of world population and projections for the future. It explains the rapid growth being experienced in developing countries, and why such rapid growth is a great burden for these countries. It also discusses official population policies and their place in the extremely personal realm of family planning.

For a free copy of the new Fall 1987 PRB film catalog, send a self-addressed, stamped envelope to the address above. The catalog provides a complete listing of audiovisual aids, with rental and purchase information.

PRB Materials and Memberships

Are you interested in rounding out your *Population Education Interchange* collection? Back issues of *Interchange* are available for $1.00 each, two or more copies, .75 each. Titles include:

- "Where is the Metropolitan U.S.?" December 1987
- "Mexico's Population: A Profile," May 1987
- "Nature's Checks on Population Growth," December 1986
- "A Potpourri of Population Puzzles," May 1986
- "A Guide to Classroom Software," December 1985
- "The Food Crisis in Sub-Saharan Africa," March 1985
- "Charting World Population Change," June 1984
- "Population Education: Tools for Teachers," March 1984

Back issues of the *Population Learning Series* modules, which are accompanied by an issue of *Interchange*, are also available for $2.00 each: two or more copies, $1.75 each. See a list of titles on the back page of the Population Learning Series.

If you find ***Population Education Interchange*** interesting and useful, you would probably enjoy receiving other PRB publications. PRB has a special membership rate for teachers. For only $28 per year, an Educator Member receives four issues of ***Population Education Interchange,*** two ***Population Learning Series*** Modules, The ***World Population Data Sheet,*** The ***U.S. Population Data Sheet,*** four ***Population Bulletins,*** 11 issues of ***Population Today,*** and occasional issues of the ***Population Trends and Public Policy*** series.

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